

Applicant : Hacrl et al.
Serial No. : 10/670,917
Filed : September 24, 2003
Page : 7 of 9

Attorney's Docket No.: 12406-055001 / P2003,0102 US

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REMARKS

In reply to the Office Action of October 4, 2005, applicant submits the following remarks. Claims 1, 17, 20 and 26 have been amended. Claim 6 has been cancelled. Claim 29 has been added. Support for claim 29 can be found in FIG. 2 and the associated text of the specification (page 4, line 24-page 5, line 9). Claim 29 is directed to a display device and corresponds to Group 1, as elected on July 14, 2005. Claims 1-5, and 7-29 are now pending after entry of this amendment, of which claims 17-28 are withdrawn. Applicant respectfully requests reconsideration in view of the foregoing amendments and these remarks.

Section 102 Rejections

I. Claims 1 and 15

Claims 1 and 15 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent Number 6,563,174 ("Kawasaki '174"). The applicant respectfully disagrees.

Amended claim 1 recites a display device comprising an array of control transistors, wherein the control transistors include a semiconductor material with a band gap sufficiently large to be transparent in the visible spectral range, wherein the semiconductor material includes boron nitride.

Kawasaki '174 describes a thin film transistor (TFT) including a layer made of zinc oxide, zinc magnesium oxide, zinc cadmium oxide or cadmium oxide (col. 5, lines 33-36).

Kawaski '174 fails to suggest a semiconductor material that includes boron nitride. For at least this reason, Kawaski '174 fails to anticipate claim 1. Claim 15 depends from claim 1 and is similarly not anticipated by Kawaski '174.

II. Claims 1, 4-5, 7 and 15

Claims 1, 4-5, 7 and 15 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent Number 5,989,752 ("Chiu"). The applicant respectfully disagrees.

Chiu describes an array of TFTs formed with a material having a bandgap energy greater than incident photon energy of 3.4 eV, such as diamond or $\text{Ga}_x\text{Al}_{1-x}\text{N}$ (col. 8, lines 1-7).

Applicant : Haerle et al.
Serial No. : 10/670,917
Filed : September 24, 2003
Page : 8 of 9

Attorney's Docket No.: 12406-055001 / P2003,0102 US
E

Chiu fails to suggest a semiconductor material that includes boron nitride. For at least this reason, Chiu fails to anticipate claim 1. Claims 4-5, 7 and 15 depend from claim 1 and are similarly not anticipated by Chiu.

Section 103 Rejections

I. Claims 8 and 16

Claims 8 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiu. The applicant respectfully disagrees.

Claims 8 and 16 depend from claim 1 and necessarily require the limitations of claim 1.

As noted above, Chiu fails to suggest or disclose a semiconductor material that includes BN. The applicant submits that no *prima facie* case of obviousness has been made with respect to claims 8 and 16.

II. Claims 1-3 and 9-11

Claims 1-3 and 9-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,246,179 ("Yamada") in view of U.S. Patent No. 6,727,522 ("Kawasaki '522"). The applicant respectfully disagrees.

Yamada describes forming a TFT by growing a layer of amorphous silicon film on a substrate 10 (FIG. 4A, col. 5, lines 37-41).

Kawasaki '522 describes forming a semiconductor with n-type ZnO that is doped with group III elements (B, Al, Ga, In, Tl) or group VII elements (F, Cl, Br, I) (col. 5, lines 33-39). P-type ZnO semiconductor material is doped with group I elements (Li, Na, K, Rb, Cs) or group V elements (N, P, As, Sb, Bi). The p and n-type semiconductor layers form separate layers of a TFT (FIG. 4, col. 5, lines 18-27).

Both Yamada and Kawasaki '522 fail to suggest or disclose a semiconductor material that includes boron nitride. For at least this reason, the applicant submits that no *prima facie* case of obviousness has been made with respect to claim 1 as amended. Claims 2-3 and 9-11 depend from claim 1 and are similarly not obvious over the combination of Yamada and Kawasaki '522.

Applicant : Haerle et al.
Serial No. : 10/670,917
Filed : September 24, 2003
Page : 9 of 9

Attorney's Docket No.: 12406-055001 / P2003,0102 US
E

III. Claims 12-14

Claims 12-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamada and Kawasaki and further in view of U.S. Publication No. 2001/0000005 ("Forrest"). The applicant respectfully disagrees.

Claims 12-14 depend from claim 1 and necessarily require the limitations of claim 1.

Forrest describes multicolor organic light emitting devices, without specifically discussing the materials used to form transistors to drive the device.

Yamada, Kawasaki '522 and Forrest fail to suggest or disclose a semiconductor material that includes boron nitride. For at least this reason, the applicant submits that no *prima facie* case of obviousness has been made with respect to claims 12-14 after amendment of claim 1.


Withdrawn Claims

Method claims 17 and 20 have been amended to require all of the limitations of independent device claim 1. The applicant respectfully requests that upon allowance of the elected invention, the withdrawn claims be considered for rejoinder per MPEP § 821.04(b).

Please apply the one-month extension of time fee in the amount of \$120.00, excess claim fees in the amount of \$200.00 and any other required charges or credits to deposit account 06-1050.

Respectfully submitted,

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